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(54) Method and apparatus for the resolution enhancement of gray scale images that include text and line art

(57) The present invention is a method and apparatus for resolution enhancement of gray-scale input images including text and line art, and more particularly to a filtering method and image processing apparatus for enhancement of high contrast line edges found in continuous tone (gray-scale) images without requiring that the input image data include predetermined tag bits to identify region types (e.g., continuous tone or text and line art). In one embodiment there is provided an image processing apparatus for resolution enhancing a gray-scale digital image input thereto, the image including text and line art represented as a plurality of digitized gray-scale values, comprising: a first channel (A), including a binarization circuit (72) to binarize the gray-scale digital image and produce a binary image, and a pattern matcher (78) for receiving the binary image and producing both a tag signal, active only when a segment of the binary image matches one of a set of template patterns, and a first high-addressability enhanced output signal; a second channel (B), parallel to the first channel (A), for receiving the gray-scale digital image and producing a second high-addressability enhanced output signal; and a selector (88), responsive to the tag signal generated by the first channel pattern matcher, for selecting the high-addressability enhanced output signals from the first or second channels (A,B) and outputting the selected output signals to a marking engine to produce a resolution enhanced output print.

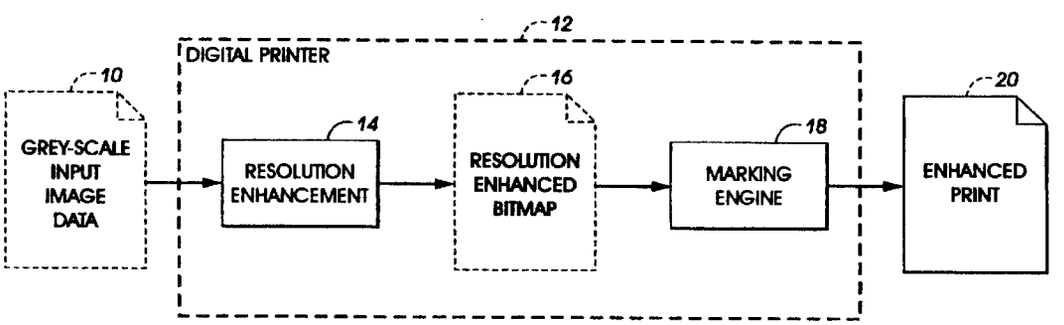

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 96 30 6847

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	WO 94 13098 A (EASTMAN KODAK) * page 8, line 19 - page 9, line 2 *	1,6	H04N1/40
A	US 4 975 785 A (KANTOR) * column 2, line 45 - line 59 * * column 5, line 63 - column 6, line 5 *	1,6	
A	GB 2 279 199 A (RICOH) * abstract; figure 2 *	1,6	
A	GB 2 170 373 A (CANON) * abstract; figure 7 *	1,6	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

H04N

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12 January 1998	Isa, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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